

CLAIMS:

1. A semiconductor processing apparatus for applying plasma treatment to a sample arranged in a vacuum process chamber, including plasma generation means for generating plasma inside said vacuum process chamber and process gas introduction means for introducing a process gas into said vacuum process chamber, comprising:

oscillation means for imparting mechanical oscillation to said semiconductor processing apparatus; and

reception means for detecting mechanical oscillation generated by said oscillation means in said semiconductor processing apparatus.

2. A semiconductor processing apparatus according to claim 1 wherein said oscillation means is arranged inside said vacuum process chamber, and imparts mechanical oscillation to components inside said vacuum process chamber; and

said reception means detects mechanical oscillation generated by said oscillation means in said semiconductor processing apparatus.

3. A semiconductor processing apparatus according to claim 1 wherein said reception means is disposed inside said vacuum process chamber and detects mechanical oscillation occurring in components inside said vacuum process chamber.

4. A semiconductor processing apparatus

according to claim 1 wherein said oscillation means and said reception means are juxtaposed with each other on a sidewall of said vacuum process chamber.

5. A semiconductor processing apparatus according to claim 1 further comprising signal processing means for analyzing a reception signal received by said reception means and estimating a condition inside said vacuum process chamber.

6. A semiconductor processing apparatus according to claim 5, wherein said signal processing means has a database for storing the result of said analysis.

7. A semiconductor processing apparatus according to claim 5, wherein said signal processing means includes alarm means for raising an alarm on the basis of the result of said analysis.

8. A semiconductor processing apparatus for imparting plasma treatment to a sample arranged in a vacuum process chamber, including process gas introduction means for introducing a process gas into said vacuum process chamber, comprising:

oscillation means for imparting mechanical oscillation to said semiconductor processing apparatus;
and

reception means for detecting mechanical oscillation generated by said oscillation means in said semiconductor processing apparatus.

9. A method of diagnosing a semiconductor

processing apparatus for imparting plasma treatment to a sample arranged in a vacuum process chamber, including plasma generation means for generating plasma inside said vacuum process chamber and process gas introduction means for introducing a process gas into said vacuum process chamber, said method comprising the steps of:

imparting mechanical oscillation to said semiconductor processing apparatus; and

detecting mechanical oscillation generated by said step inside said vacuum processing apparatus.